WHAT IS CLAIMED IS:

1. A mass spectrometer comprises:

a plasma ion source, which provides analyte ions;

a mass analyser;

an interface between the plasma ion source and the mass analyser; and

the interface comprising an interface structure being one of a sampling cone and a skimmer cone of the interface, which separates a first region at a relatively high pressure, which receives plasma from the plasma ion source from a second region at a relatively low pressure leading to the mass analyser and, which provides an aperture between the first higher pressure region and the second lower pressure region through which the plasma flows from the higher pressure region towards the lower pressure region,

the interface structure comprising a passage, which supplies a substance into the aperture interacting with the plasma for attenuating polyatomic or multicharged interfering ions by reactive or collisional interactions.

2. The mass spectrometer as claimed in claim 1, wherein the interface comprises a sampling cone followed by a skimmer cone, wherein said structure is the skimmer cone, which includes the passage for supplying a substance into its aperture.

3. The mass spectrometer as claimed in claim 1, wherein the interface comprises a sampling cone followed by a skimmer cone, wherein said structure is the sampling cone, which includes the passage for supplying a substance into its aperture.

4. The mass spectrometer as claimed in claim 2, wherein the sampling cone includes a passage for supplying a substance into its aperture for interaction with the plasma for attenuating polyatomic or multicharged interfering ions by reactive or collisional interactions.

5. The mass spectrometer as claimed in claim 2, further comprising an electrode means following the skimmer cone, which extracts an ion beam containing analyte ions from the plasma for transmission to the mass analyser,

the electrode means comprises at least one electrode, which is configured and associated with the skimmer cone such that the portion of the relatively low pressure region between the

skimmer cone and the at least one electrode has a relatively higher pressure than the pressure elsewhere within said relatively low pressure region thereby to provide a collisional gas volume for assisting the attenuation of polyatomic or multicharged interfering ions.

6. The mass spectrometer as claimed in claim 5, wherein the at least one electrode includes a passage, which supplies a substance into an aperture of the at least one electrode for interaction with the plasma for attenuating polyatomic or multicharged interfering ions by reactive or collisional interactions.

7. The mass spectrometer as claimed in claim 2, wherein the skimmer cone includes an additional passage, which supplies an additional substance into its aperture for interaction with the plasma for attenuating polyatomic or multicharged interfering ions by reactive or collisional interactions.

8. The mass spectrometer as claimed in claim 4, wherein the sampling cone includes an additional passage, which supplies an additional substance into its aperture for interaction with the plasma for attenuating polyatomic or multicharged interfering ions by reactive or collisional interactions.

9. The mass spectrometer as claimed in claim 4, wherein the apertures through which the plasma flows and into which the substance for interaction with the plasma is supplied is parallel-walled and relatively long for promoting extra collisions.

10. The mass spectrometer as claimed in claim 4, wherein the apertures, through which the plasma flows and into which the substance for interaction with the plasma is supplied has a diameter, which increases stepwise in the direction of flow of the plasma for lessening clogging of the aperture by solids deposited from the plasma.

11. The mass spectrometer as claimed in claim 4, wherein the apertures, through which the plasma flows and into which the substance for interaction with the plasma is supplied is tapered outwardly in the direction of flow of the plasma for lessening clogging of the aperture by solids deposited from the plasma.

12. The mass spectrometer as claimed in claim 4, wherein the interface structure includes means producing a shock wave in the region of the apertures where the reactions or collisions occur to promote the rate of reactions or collisions that remove interfering ions.

13. The mass spectrometer as claimed in claim 2, wherein the passage, which supplies a substance into the aperture has an outlet, which is located and configured for inducing a shock wave in the region of the aperture to promote the rate of reactions or collisions improving the attenuation of interfering ions.

14. The mass spectrometer as claimed in claim 2, wherein the passage, which supplies a substance into the aperture has an outlet, which is located and configured for a substance supplied therethrough to exit the passage in substantially the same direction as the plasma flow through the aperture.

15. A method for plasma mass spectrometry comprising the steps of:

generating a plasma containing analyte ions;

substantially confining the plasma radially whilst flowing it from a higher pressure region towards a lower pressure region;

supplying a substance directly into the substantially radially confined plasma to cause reactive or collisional interactions with polyatomic or multicharged interfering ions therein and thereby attenuate such polyatomic or multicharged ions; and

extracting an ion beam from the plasma for mass analysis of the analyte ions.

16. The method for plasma mass spectrometry as claimed in claim 16, wherein the substance is supplied into the substantially radially confined plasma so as to create a shock wave in the plasma to promote the rate of reactions or collisions for improving the attenuation of interfering ions.

17. The method for plasma mass spectrometry as claimed in claim 15, wherein the substance is supplied into the substantially radially confined plasma so as to cause substantial stagnation of

the radially confined plasma without inducing a shock wave therein for increasing the residence time of the plasma whilst it is radially confined for improving the attenuation of interfering ions.

18. The method for plasma mass spectrometry as claimed in claim 15, wherein the substance is supplied into the substantially radially confined plasma so as to have a substantially zero radial speed component and an axial speed component substantially in the same direction as the plasma flow.

19. The method for plasma mass spectrometry as claimed in claim 18, wherein the axial speed component is substantially the same speed as the plasma.

20. The method for plasma mass spectrometry as claimed in claim 15, wherein the plasma is generated in argon and the supplied substance is hydrogen.